Senate subcommittee explores location data for wireless 911 calls

Urgent Communications

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Most panelists testifying before a Senate subcommittee called for the FCC to initiate a proceeding to examine accuracy standards for location information associated with 911 calls from wireless devices, although there was some disagreement whether new location technologies have proven to be as reliable as promised.

FCC commissioners should initiate a proceeding to assess technologies that are designed to provide more accurate location data of wireless callers to the 911 system, according to most panelists testifying yesterday before a subcommittee of the Senate Commerce Committee on the subject.

At issue is a longstanding problem for public-safety. Traditional wireline telephony calls to 911 centers automatically include an exact address location of the caller, but about 70% of all 911 calls come from wireless devices, as many households are declining wireline service. And location information associated with wireless calls—where available at all—is only required to be accurate within 50 meters, at best.

“I think most consumers would be surprised to know that, if you’re calling from a wireless phone, the 911 system may not be able to locate exactly where that person in need is,” subcommittee Chairman Mark Pryor (D-Ark.) said during the hearing, which was webcast. “I think most consumers would be alarmed if they understood this, and I think the problem is especially true for phone calls made from indoors. It’s time for an upgrade, and it’s time that we recognize that there are just too many stories affecting too many individuals that have led all too often to unnecessary suffering, and we need the ability to fix this.

“We must go to a more accurate, more timely and more robust system … I believe it’s time for the FCC to take concrete steps to make sure that all wireless callers can be located by 911 centers, and I call on the FCC today to initiate a proceeding to make that happen.”

Gigi Smith, president of the Association of Public-Safety Communications Officials (APCO), testified that her public-safety answering point (PSAP) has seen an increase in the number of 911 calls from wireless phones, but the

“consumer expectations of the location capabilities of their devices do not match our actual experience in the PSAP.” Because wireless 911 location information is not exact, call-takers first seek location information from a wireless caller before getting details about the emergency situation, she said.

“If the caller cannot provide his or her address, then we question the caller in detail. However, this can be time-consuming, and 911 callers can be panicked, scared, injured or otherwise unable to speak or provide correct information,” Smith said.

Today, location information is gathered primarily through satellite-based GPS systems, which deliver the latitude and longitude—or XY—coordinates of the caller. While this is effective outdoors in open areas, it does not work well indoors, because the satellite cannot get a clear connection to the device.

Another indoor problem involves multi-story facilities, such as apartment buildings or office towers. Even if the XY location information is accurate, it does not provide information indicating the vertical location—or Z coordinate—of the caller, so first responders know which floor needs to be accessed. This is more important today than ever before, because so many people do not have landline phones or call from their wireless phones from such multi-story structures.

“We’ve got to have faster location capabilities,” Trey Forgety, director of government affairs for the National Emergency Number Association (NENA), testified during the hearing. “But, moreover, to deal with the realities of how wireless is used today—indoors, in cities and in tall buildings with multiple floors—we have to have the ability to locate people precisely, and that means down to the room level and the floor level within a large structure."

Forgety said that there has been “intense innovation” in the effort to improve location-accuracy information for wireless calls to 911 and called for the FCC to initiate a rulemaking “soon” to establish rules that reflect the improvements made in technology.

“We need better; we need faster; we need vertical. Technology is available today to improve our ability to respond to emergencies, to improve the ability of wireless networks and devices to locate consumers. The time for further study, the time for further delay, has passed. It’s time we improve our ability to locate consumers when they are in trouble and the ability of public safety to get to them when they’re in need.”

Kirk Burroughs, senior director of technology for Qualcomm, expressed optimism that location capabilities enabled by 4G technologies such as LTE can improve XY location data immediately but said that getting vertical-location data is a “bigger challenge” in the near term.

Christopher Guttman-McCabe, executive vice president for CTIA—a trade association for wireless carriers—said he believes an FCC rulemaking would make sense if a workable technology solution already had emerged, but he believes the current collaborative efforts between industry and public safety will be more productive than a regulatory rulemaking.

How do you set indoor location-accuracy requirements when you just did a testbed and, of the three entities that chose to participate ... none of those three were materially better, in terms of the ability to deploy in a timely basis and the ability to find people accurately?" Guttman-McCabe said.

“I am fearful, to some extent, that [if] the FCC starts a [rulemaking] process, they will develop standards based on vaporware or assurances from vendors that won’t come to pass. We’ve seen it before. That’s where our concerns lie—not with ultimately setting standards, once we have the capability and technology that’s able to deliver on that ... I just don’t want to see the cart get before the horse.”

But Forgety said that implementing these new technologies still would be an improvement compared to the existing methods of delivering location data for wireless calls to 911.

“Having the technology [being tested] today is clearly better than having nothing,” Forgety said. “So, having something that is better, but maybe not perfect, is still good. From the public-safety standpoint, we don’t want the perfect to be the enemy of the good and therefore delay technologies that are available.”

Claude Stout, executive director for Telecommunication for the Deaf and Hard of Hearing, expressed support for the FCC to initiate a rulemaking on location accuracy for 911 wireless calls.

“I believe it is time for the FCC to get on to a rulemaking on this process,” Stout said, speaking through a sign-language interpreter. “Honestly, we can’t wait. We’re going to lose more lives. And those people—our consumers—need to be protected. They need to be saved.”

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